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AUTHOR Ottina, John R.
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ABSTRACT

Defined as the skills development component of education, vocational education can and should become the mortar that cements together a unified educational experience for the individual that will culminate in meaningful and productive results. The relentless advance of technology gives us the key to new, more versatile, vocational education. The health field, the area of environmental control, aviation, the aerospace industry, the physical sciences, and related engineering fields are all examples of developing areas with specialized needs to be met by the new vocational education at the postsecondary level. Secondary school vocational education must prepare students in all kinds of core knowledge and skills that are not purely abstract or academic but that have application beyond a single occupation or occupational area. Enrollments in both secondary and postsecondary vocational education have been increasing, and more Federal funds have been allocated to this area. Vocational education has brought the schools into the adult community, creating a constituency--a builtin support group for further development in this area. (Author/MW)

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THE NEW VOCATIONAL EDUCATION*

by
John Ottina
U.S. Commissioner of Education

Good morning.

The opportunity of opening this last morning session is a gratifying one for me.

Your tentative program had me telling you "where to go from here, and how to get there." I'm not sure that any Commissioner of Education would ever have been so foolish as to tell the Chiefs "where to go and how to get there," but I assure you that I have no such plan.

One of the clear signals that this administration has transmitted is that it considers the States fully capable of charting their own course in education and that it is prepared to return the major part of important decisions about Federal education assistance monies back to the States and localities, closer to the people and to their needs.

At a number of conferences in the past year or two the audience has been presented with a variety of speakers-- some addressing themselves to education as a whole, some to what we now call Career Education (which may well be almost indistinguishable from education as a whole), some to strictly liberal arts higher education, and some to Vocational Education. What often occurs at such gatherings is that these various concepts get so muddled together that the individual listener fails to carry away with him an absolutely clear understanding of the <u>difference</u> between,

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let's say, Career Education and Vocational Education. Conversely, that same listener often walks out of the meeting without a clear feeling of the relationship between Career Education and Vocational Education.

So let me state at the outset exactly what it is I am talking about here today. I'm discussing Vocational Education, and I define that as the skills development component of education. That definition holds whether we talk about vocational education as a part of Career Education or as a part of a traditional education program.

I repeat those key words: The skills development component.

In the hands of such skilled educator-administrators as we have here today, the skills development component can become--as it should--the mortar that cements together a unified educational experience for the individual that will culminate in meaningful and productive results. That applies whether we mean Vocational Education in secondary or post-secondary school or as part of the education or re-education of an adult.

This definition applies whether we are entirely sold on what has come to be known as the Career Education concept of education or whether we intend to follow the path--certainly better known, possibly more clearly marked--of the traditional comprehensive form of education universal in the country up until a few years ago.

Now that we all know what I am up here talking about, I feel a little more comfortable about moving ahead with what I have to say.

For one thing, just as we have made our intent plain in our proposals for grants consolidation in the elementary and secondary area, we will soon transmit to Congress proposals for consolidated grants for vocational and adult education also. These grants would restructure the present categorical mode, simplify administration of programs, increase flexibility for school officials in meeting local priorities, and improve opportunities for better planning and budgeting by State and local officials.

I should note, however, that if the new legislation is not enacted this year, this administration still plans to request vocational and adult education funds under present authorities.

But to get on with Vocational Education.

We all recognize Vocational Education's enormous significance not only to us in the education enterprise but, more importantly, to the society at large.

But what is so urgent about it at this time as to bring me here to talk with you about it?

Well, for one thing, we have in this country the highest youth unemployment rate in the world, and the relentless advance of technology is making it worse. But it is just this relentless advance of technology that gives us the key to the new Vocational Education.

What do I mean by the <u>new</u> Vocational Education?

The new vocational education is more versatile than the old, in that there is a greater variety of offerings--not only to the high school students of the country--but to postsecondary students as well.

The term postsecondary education brings to many minds a vision of a quiet college campus, of a great research university, or at the very least of one of the fast growing array of junior and community colleges. But in the Southeastern part of the United States alone there are some 300 institutions classified as "postsecondary" that do not offer a degree because that is not their function. They are skills development institutions. Examples? The technical centers in South Carolina, the technical institutes in North Carolina, and the vocational-technical schools of Georgia. These specialized institutions, among many others, both public and private, throughout the country, provide a broad variety of offerings in the technical fields that are responsive to the needs of people and directly related to the present needs of the economy of the Nation.

So one way to say what I mean by the <u>new</u> Vocational Education is to tell about the kinds of institutions that offer it. Another way is to describe what is offered.

The health field is an example of an occupational area that has seen an extensive specialization of skills following the development of new technologies. Perhaps because of Medicare and Medicaid, people are seeking out medical assistance where once they ignored their physical afflictions and probably died of them. This has created a

demand for a whole new range of highly skilled technicians and professionals. The demand ten years ago for nurses has by now been largely supplied. The new demand is for occupational and physical therapists, medical laboratory technicians, medical office assistants, physician's assistants, X-ray therapists, radiation therapists, and so on.

The pending national health insurance legislation, regardless of what form it finally takes, can be expected to further accelerate the demand for skilled medical technicians, and to meet that demand will be up to the new Vocational Education.

Another occupational area that will require very specialized technical and scientific training is just emerging in response to one of the most urgent needs of our time-- environmental control.

Air and water pollution, soil pollution, and sanitation have become such urgent concerns that legislative bodies, the public media, and citizens at large are demanding action.

Increasing numbers of programs will be needed to prepare technicians for:

*Water conservation and pollution control

*Air pollution control

*Soil reclamation, management, and conservation

*Solid waste disposal

*Sanitation

*Environmental health

A few water pollution and water resource development technician education programs are in operation now, but there are not nearly enough graduates to meet the need.

Air pollution control technician programs are only now emerging, although we do know of one school that will graduate its first class this year. Because air pollution is largely caused by chemical products of combustion which produce smog, well prepared chemical technicians could, with some specialization, become effective air pollution control technicians--but there are not enough chemical technicians to meet the requirements of the chemical industry, let alone those of the air pollution control industry. It is evident that more programs in air pollution control education must be developed.

Technological developments in military and civilian aviation and the aerospace industry continue to generate need for additional personnel despite the temporary effects of the fuel shortage. In the past, airline pilots usually received their initial training in the military, but the increasing need for pilots is exceeding the capacity of the military to supply them. The same is true for other kinds of personnel in the aerospace and aeronautical industry. Programs are emerging at the post-highschool level for:

*Aviation pilot

*Aviation navigator

*Aviation mechanical and diagnostic technician

*Air traffic controller

*Aviation metecrologist

*Telemetry and communication technician

*Airport management technician

Postsecondary technician educators have begun programs in most of those subjects. Many schools make cooperative work and study arrangements. Obviously, no 2-year or even 3-year post high school program can qualify an inexperienced youth to be a multi-engine pilot or air traffic controller, but it can prepare him to begin employment and proceed by education and experience on the job to various stages of higher qualification.

The needs of private and public employers for technicians in the more common physical science and related engineering fields have never been more than one-third filled by graduates of high quality technician programs. Now urgent demands for new kinds of technicians in these fields are being generated by technological development. Here are examples of the occupations which are emerging:

*Physical radiological technician

*Nuclear technician

*Numerical control technician

*Computerized drafting and design technician

*Underwater engineering technician

*Laser-electro-optic technician

I could go on almost indefinitely, but I won't. I do hope, however, that I have made the point that vocational and technical education has become an extraordinarily complex dazzle of attractions, definitely well out of the basement shop by now. I'd like you to consider the basis that

you may already have at hand in your States, in terms of facilities and equipment if nothing else, that can be turned to such a fascinating range of occupational training.

While the specializations we were just talking about tended to be from the upper range of occupations in each such grouping— usually requiring training at the postsecondary level -- it's important to remember that the secondary school training offered by the new vocational education is not unrelated to those advanced skills.

Concern for the adaptability of the individual worker has gone along with a determination to adapt curriculums to a changing world. There are kinds of core knowledge and core skills that are not purely abstract or academic but do have application beyond a single occupation or occupational area. Secondary-level vocational students trained in these core skills are usually ready to take on entry level jobs in more than one specific occupational area and, ideally, they have access not only to vertical career mobility but lateral adaptability across occupational areas as well.

Unfortunately, the completely ideal situation is not common. But the movement is on the wing, and this may be due as much to "pressure from below" as to educators' insight. The Washington Star-News reported a few weeks back that a survey of high school students indicates that a clear majority are asking for more and better vocational offerings. From 1970 to 1972, enrollments in secondary vocational education courses increased by more than 40 percent -- from 5 million to 7 million students.

Postsecondary vocational enrollments rose by 30 percent -- from 1.0 to 1.3 million. Even in adult vocational education, which we feel has suffered from undue and very unwise neglect by vocational education, the increase was from 2.6 to 3.0 million -- a jump of some 15 percent.

As another index of growth, there are 2,148 area vocational schools now, and about 300 are being added yearly. Area vocational schools represent one of the Federal Government's major commitments in vocational education funding. The States and localities have been more than matching our commitment. Something like 50 percent of the area vocational schools have been financed entirely at the State and local level, with no Federal participation at all.

As an extension of the area school, in New York and New Jersey that we know about, mobile units loaded with welding equipment or construction or other equipment, are taking the skills development component of education to relatively remote places comparatively inexpensively. This may well be a major answer to the problem of too little population to make the necessary expenditure of funds for a vocational education school feasible.

A lot of people out there, particularly at the local levels, are and have been for some time every bit as committed to the new Vocational Education as we are at the Federal level. What we would like to encourage is the establishment of equally firm lines of commitment and communication between yourselves and the partisans of the new occupational training. They are ready to work with you directly on what they consider to be a very high priority concern.

The estimated total expenditure for vocational education in 1972 was an impressive $2.5 billion. The Federal portion of this was a very substantial $466 million, but what should be particularly noted is the level of State and local support for this very expensive enterprise.

From the administrator's viewpoint, we can't, and shouldn't attempt to get around the simple fact that it costs more to teach a man or woman how to operate a machine than how to add numbers or string sentences together.

Some impressive things have been done recently to keep the cost of vocational instruction down -- area vocational schools and such things as New York's and New Jersey's mobile units among them -- but we need to find still more ways.

Expensive though Vocational Education may be, we would nevertheless like to persuade you to see in the new vocational education something of what its partisans see -- a center-stage educational concern.

From State to State, the problems of planning and of coordination and articulation among elements of the educational system will be different, but what we're hoping will be the same from State to State is a degree of effort sufficient to solve these problems. If Vocational Education is to thrive, there must be coordinated planning on some basis among the secondary level and the levels of the 2-year and the 4-year colleges.

It isn't just long-range planning that we're talking about, but planning on an annual basis also to make the best use of the facilities, the staff, and the equipment, and to make sure it fits into the needs of the students and those of the labor market.

And now I feel I must get down to a completely pragmatic question, one that I would ask if I were you and that you may well ask anyway if I don't answer it first.

That question is: What's in it for me?

It's a fair question. Nothing immoral about it at all.

A Chief State School Officer has only so many resources at his command, and he can divide them up only so many ways. He would rather not do this arbitrarily, but rather in some logical, systematic way. Why should he consider handing over a larger slice of pie to vocational education than to, let's say physical education or the arts or the three Rs. He already knows that, because it costs more, vocational education is bound to take more pie than he would like to part with.

What's in it for the Chief State School Officer? (Let's assume without further discussion all such higher motivations as our general altruistic desire to make sure that every young person and adult really gets the kind of education he or she wants or needs. We'll just say that's understood.)

In his own self interest, the school administrator must give a very high priority to the skills development component of education for very practical reasons.

What is the toughest problem any school administrator faces today? Of course it is "Where do I get enough money to operate my schools and my programs?" and the answer is: From the people of the States and

communities who will or will not support their school systems depending on what they see and hear or hear about them.

If what they see is what they get, and what they get is what they like, then there is no problem. If what they see and get they don't like, but if they are listened to--and some change is made in the direction of things--then again there is no problem.

Only if people feel the schools are not doing the right job and feel there is nothing they can do about it does a problem exist.

Over the years, Vocational Education has done on the whole the best job of any component of education in bringing the community into the schools. This has come about in a number of ways, but two are most important. One is that Vocational Education has long been available to the adult population of most communities in a way that general studies have not. Vocational Education has brought members of the adult community into the schools.

While this has been going on, something else has been happening to bring the schools in a sense into the adult community. That something is cooperative education. Wide areas of business and industry have become heavily involved with the schools as partners in cooperative education. Having become involved, they have become supportive--largely because they were listened to when they had constructive suggestions for change.

So what do we have in Vocational Education that we don't see nearly so clearly in, say, music education or in the teaching of history?

We have a constituency. We have a built-in support group. We have voting, tax-paying, eagle-eyed grownups who have a stake in seeing Vocational Education get at least its fair share of education's financial pie.

These same constituents, however, are aware that Vocational Education is a part of the whole--that, without support for all of education, Vocational Education would lose. And these enlightened supporters are ready to do more than just leap forward when called upon to cheer for more money for Vocational Education. They are there to support education. They are also there to be unhappy, though, if they feel that Vocational Education is not getting its fair share of the pie.

That, if I have made myself clear, is what is in it for you!

We all hope that early passage of condolidated education grants legislation will give you greater flexibility in the administration of Federal vocational education monies. But, regardless of whether this legislation passes this year, I know you would concur with me that the practical decisions in Vocational Education are at least accessible to your influence, if not entirely in your hands -- assuming you choose to make that kind of commitment of your energy and time. And it is an important part of my mission here today to try to persuade you that Vocational Education is deserving of all the status you can confer on it and of all the energy you can give it.

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